Delirium detection and improved delirium management in older patients hospitalized for hip fracture

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Abstract Delirium is a common and potentially devastating problem for older patients following hip fracture. Although early detection is recommended, description and evaluation of standardized approaches are scarce. The aims of this quality improvement project were to: (1) implement a clinical algorithm for improving delirium detection and management and (2) assess the impact of the clinical algorithm on length of stay, discharge disposition and patient satisfaction. The pilot study was implemented on an orthopedic unit to evaluate the effectiveness of a clinical protocol for delirium detection and management to improve outcomes. Outcomes of 33 elderly post-operative hip fracture patients were compared to historical controls from the same unit. Delirium was detected in 18% of patients. Length of stay was reduced by 22% ($P < .001$), discharge disposition showed a 13% improvement ($P = .17$) and patient satisfaction scores showed a 15% ($P = .15$) improvement post-intervention. Implementation of a clinical algorithm to promote early detection and treatment of delirium in post-operative hip fracture patients is feasible and associated with improved outcomes.
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Introduction

Delirium can have devastating outcomes that burden patients, family members and the healthcare system. It is characterized by an acute alteration in baseline mental function associated with fluctuations of attention, perception and consciousness (American Psychiatric Association, 2013). Delirium develops over a short period of time (usually hours to days) and fluctuates during the course of the day. The etiologies are diverse and multifactorial and often reflect the pathophysiological consequences of an acute medical illness, medical complication or drug intoxication (American Psychiatric Association). Delirium can have a widely variable presentation and is often missed and underdiagnosed as a result. At present the diagnosis of delirium is clinically based and depends on the presence or absence of certain features. Management strategies for delirium are focused on prevention and symptom management (Fong et al., 2009). Predisposing risk factors for delirium include: dementia or cognitive impairment, history of delirium, functional impairment, visual impairment, hearing impairment, comorbidity or severity of illness, depression, history of TIA or CVA, alcohol misuse, older age (Inouye et al., 2014). Precipitating risk factors include: polypharmacy, use of physical restraints, sleep deprivation, social isolation, use of Foley catheter, constipation, lab abnormalities, infection, trauma admission, orthopedic and cardiac surgery (Inouye et al., 2014). Additionally, duration of surgery longer than two hours is associated with postoperative delirium (Lee et al., 2011).

The size and scope of the delirium are significant. It is a major burden to healthcare systems at local, national and international levels. It is estimated that delirium costs an additional $2500 per patient resulting in the United States Medicare Services expenditure to be approximately seven billion dollars annually (Young and Inouye, 2007). Reports indicate that incidence of delirium in elderly patients in acute care settings range from 10% on general medical units to as high as 85% in advanced cancer units (Maldonado, 2008). Among postoperative hip fracture patients, delirium is particularly prevalent, affecting 28%–60% of patients (Lee et al., 2011). During hospitalization it is associated with adverse events including functional decline, longer lengths of stay (LOS), increased risk of institutionalization, increased cost to hospitals and increased risk of mortality. Delirium is also associated with adverse events that are often attributed to poor quality hospital care (Waszynski, 2007). Hip fracture patients who develop delirium while in the hospital have significantly worse outcomes than those who do not become delirious (Holroyd-Leduc et al., 2011). Delirium constitutes an independent risk factor for institutionalization and functional decline in hip fracture patients living at home prior to the fracture (Krogseth et al., 2014).

Prevention and early detection of delirium have been shown to improve outcomes and decrease mortality and costs of care significantly (Fong et al., 2009). Yet research indicates that clinicians fail to recognize the condition in older hospitalized patients (Holly et al., 2014). Evidence suggests that prompt identification and effective management of delirium and its underlying causes begin with the practice of frequent assessments using a standardized tool (Waszynski, 2007). The Confusion Assessment Method (CAM) may be the most useful tool in diagnosing delirium as it enables non-psychiatrically trained clinicians to identify and recognize delirium quickly and accurately in both clinical and research settings (Inouye, 2006). Early and accurate recognition by nursing staff assist in earlier delirium management. Nurses, who spend more time at the bedside than physicians, play a crucial role in the recognition of delirium. They have frequent and continuous contact with patients and are better able to observe fluctuations in attention, level of consciousness and cognitive functioning. As a result, observations made by nurses are critical for the early detection and management of delirium.